

### **REMARKS**

Reconsideration and allowance in view of the foregoing amendment and the following remarks are respectfully requested.

It is noted that an Information Disclosure Statement was filed on February 15, 2005. It is respectfully requested that the Examiner consider that Information Disclosure Statement and return an initialed and dated copy of the Form PTO-1449 that accompanied the same with the next Official Communication.

Claims 1-11 remain pending.

Claims 1-9 were rejected under 35 USC 103(a) as being unpatentable over Kato et al in view of Suzuki et al. Applicant respectfully traverses this rejection.

Claim 1 as previously presented provided that the gas sensing element comprises *inter alia* a porous electrode protecting layer covering the measured-side electrode and specified a limit current density of the electrode protecting layer under specified conditions.

In contrast to the provision according to the invention of a (single) protecting layer, Kato discloses first and second protecting layers respectively covering first and second portions of a measured gas electrode. As the Examiner has noted, Kato discloses, in column 2, lines 14-17, that his second porous protecting layer has an oxygen permeability in the range of 0.005 to 16 mA/mm<sup>2</sup> per % of the concentration of oxygen in the gas to be measured. Furthermore, a description relating to the limit current density can be found in column 4, lines 20-37 and in Table 1. However, the above-noted properties of the electrode protecting layer are relevant only to one of a plurality (i.e., first and second) of protecting layers, each of which directly contacts the measured gas electrode. Furthermore, the protecting layer having the gas permeability noted by the Examiner is located at a low-temperature portion which does not give substantial effect to the sensor characteristics. In this regard, the Examiner's attention

is directed to column 3, lines 37-41 of Kato wherein it is described that the first porous protecting layer 4 is provided on the high-temperature portion of the first electrode layer 1 and the second porous protecting layer 5 is provided on the low-temperature portion of the first electrode layer 1. Thus, Kato teaches two discrete protecting layers neither of which covers (the entire) electrode and further the (second) protecting layer having the properties noted by the Examiner is provided only on the low-temperature portion.

As noted above, claim 1 previously provided that there was a porous electrode protecting layer covering the measured gas side electrode. In view of the Examiner's interpretation of this language is not requiring that the layer be a single layer covering the entire gas side electrode, claim 1 has been amended to explicitly provide that the claimed porous electrode protecting layer is a single layer covering the entire gas side electrode so as to more clearly distinguish the claimed gas sensing element from a sensing element having plural porous electrode protecting layers each of which covers only a portion of the measured gas side electrode.

In this respect, the second porous protecting layer 5 relied upon by the Examiner is an auxiliary protecting layer that does not anticipate and is not equivalent to the electrode protecting layer recited in applicant's claim 1. The first porous protecting layer 4 provided on the first electrode layer 1 of Kato appears to function as a main electrode protecting layer because an electrode having better gas permeability can function as a measuring electrode, but that first porous protecting layer 4 does not meet the limitations of applicant's claim. The second protecting layer does not either because it does not cover the entire electrode.

The electrode protecting layer of the present invention directly contacts the measured-electrode and is sufficiently wide to entirely cover the measured gas electrode. On the other hand, as noted above, Kato's gas sensor requires two protecting layers to cover the measured gas electrode. Because the properties defined

SUGIYAMA, T. et al.  
Appl. No. 10/001,800  
March 8, 2005

in claim 1 relate to the electrode protecting layer directly contacting and entirely covering the measured gas electrode is respectfully submitted that Kato does not anticipate nor render obvious the invention claimed.

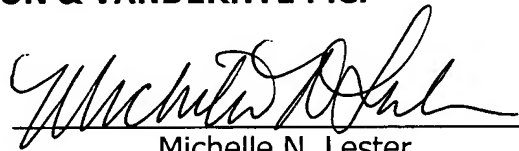
Because the secondary reference to Suzuki does not overcome the aforementioned deficiencies of Kato, even if Kato is combined with Suzuki (which teaches a method for measuring a limit current density) the present invention would still not be anticipated nor obvious.

All objections and rejections having been addressed, it is respectfully submitted that the present application is in condition for allowance and an early Notice to that effect is earnestly solicited.

Respectfully submitted,

**NIXON & VANDERHYE P.C.**

By:



Michelle N. Lester  
Reg. No. 32,331

MNL:slj  
1100 North Glebe Road, 8th Floor  
Arlington, VA 22201-4714  
Telephone: (703) 816-4000  
Facsimile: (703) 816-4100